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10/578,178	05/04/2006	Ulrike Licht	289724US0X PCT	5199

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EXAMINER

LOEWE, ROBERT S

ART UNIT PAPER NUMBER

1796

NOTIFICATION DATE DELIVERY MODE

02/06/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/578,178	Applicant(s) LICHT ET AL.	
	Examiner Robert Loewe	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/4/06.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☒ Claim(s) 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/ are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>9/1/06</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Specification

The abstract of the disclosure is objected to because Examples 1 and 4 read "0 g of a monomer mixture", which is incorrect. Appropriate correction is required. See MPEP § 608.01(b).

Claim Objections

Claim 20 is objected to because it is a duplicate of instant claim 4. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 4, 5 and 9 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Reusmann et al. (US patent application publication 2003/0198819).

Even though product-by-process claims are limited and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior art product was made by a different process. *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Please note MPEP 2113, which addresses the appropriateness of a rejection under 35 U.S.C. 102/103 for product-by-process claims.

Claims 1 and 2: Reusmann et al. teaches an aqueous dispersion of a polysiloxane-polyurethane which is obtained by reacting polyisocyanates and isocyanate-reactive compounds; the isocyanate-reactive compounds comprising a polysiloxane having the structural limitations of

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formula I of instant claim 1 and of instant claim 2 (abstract and paragraph 0036). While Reusmann et al. does not teach that the polyurethane dispersion is obtained by a reaction of the corresponding polyurethane starting components in an aqueous miniemulsion, patentability is based on the product itself.

Claim 3: Reusmann et al. further teaches an aqueous dispersion wherein the polyurethane has been synthesized from (a) polyisocyanates (paragraph 0096), (b1) 100 mol%, based on the total amount of the polyols (b) of a polysiloxane polyol (paragraph 0095), and (c) dimethylolpropionic acid (paragraph 0095), which is a monomer having groups which are reactive toward isocyanate groups.

Claim 4: Example 1 of Reusmann et al. teaches that the polyurethane comprises about 10% by weight polysiloxanes of formula I of instant claim 1 (84 g polyester + 24 g siloxane polymer + 105.7 g of isocyanate + 16.8 g of DMPA + 12 g of butanediol = 243 g total of which 24 g is polysiloxane) (paragraphs 0095-0096).

Claim 5: Reusmann et al. further teaches that the aqueous dispersion further comprises additional polymers (paragraph 0073).

Claim 9: Reusmann et al. further teaches a method of making a coating using the aqueous dispersion of instant claim 1 (paragraph 0088).

Claims 1-5, 9, 10 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reusmann et al. (US patent application publication 2003/0198819) in view of Licht et al.

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(WO 02/064657). For convenience, the English language equivalent US patent application publication 2004/0077777 will be relied upon.

Claims 1 and 2: Reusmann et al. teaches an aqueous dispersion of a polysiloxane-polyurethane which is obtained by reacting polyisocyanates and isocyanate-reactive compounds; the isocyanate-reactive compounds comprising a polysiloxane having the structural limitations of formula I of instant claim 1 and of instant claim 2 (abstract and paragraph 0036).

Reusmann et al. does not explicitly teach that the polyurethane dispersion is obtained by a reaction of the corresponding building blocks in an aqueous miniemulsion. However, Licht et al. does teach an aqueous dispersion of a polyurethane which is obtained by emulsion polymerization of polyisocyanates and isocyanate-reactive compounds [including polysiloxane diols (paragraph 0028)] (abstract). Licht et al. further teaches that the aqueous dispersions are obtained by miniemulsion techniques (paragraphs 0062-0063). Reusmann et al. and Licht et al. are combinable because they are from the same field of endeavor, namely, aqueous dispersions of polyurethanes. At the time of the invention, a person having ordinary skill in the art would have found it obvious to prepare the polyurethane compositions of Reusmann et al. using the process of miniemulsion as taught by Licht et al. and would have been motivated to do so because Licht et al. teaches that polyurethane dispersions prepared directly from the raw materials using a miniemulsion process has both an economic and environmental benefit compared to aqueous dispersions which rely on polyurethane prepolymers and polyurethane polymers (i.e., post polymerization dispersion) (paragraph 0010).

Claim 3: Reusmann et al. further teaches an aqueous dispersion wherein the polyurethane has been synthesized from (a) polyisocyanates (paragraph 0096), (b1) 100 mol%, based on the

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total amount of the polyols (b) of a polysiloxane polyol (paragraph 0095), and (c) dimethylolpropionic acid (paragraph 0095), which is a monomer having a hydrophilic group and is reactive toward isocyanate groups.

Claim 4: Example 1 of Reusmann et al. teaches that the polyurethane comprises about 10% by weight polysiloxanes of formula I of instant claim 1 (84 g polyester + 24 g siloxane polymer + 105.7 g of isocyanate + 16.8 g of DMPA + 12 g of butanediol = 243 g total of which 24 g is polysiloxane) (paragraphs 0095-0096).

Claims 5 and 19: Reusmann et al. further teaches that the aqueous dispersion further comprises additional polymers which are obtained by free-radical addition polymerization (paragraph 0073).

Claim 9: Reusmann et al. further teaches a method of making a coating using the aqueous dispersion of instant claim 1 (paragraph 0088).

Claim 10: Reusmann et al. does not explicitly teach that the compositions may be used as foam stabilizers. However, since Reusmann et al. does explicitly teach aqueous dispersions meeting the structural requirements of claim 1, they can inherently be used in the form of a foam stabilizer.

Claim 17: Reusmann et al. further teaches additional components other than monomers (a) to (c) comprising at least two isocyanate groups, of which at least one group is a primary amine (paragraph 0055).

Claim 18: Reusmann et al. further teaches additional components other than monomers (a) to (d) comprising a reactive group which is an alcoholic hydroxyl group (paragraph 0058).

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Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Licht et al. (US patent application publication 2003/0105223), in view of Reusmann et al. (US patent application publication 2003/0198819).

Claim 6: Licht et al. teaches a process for preparing an aqueous polyurethane dispersion comprising: reacting polyisocyanates and isocyanate-reactive compounds in aqueous miniemulsion (abstract), whereby the isocyanate-reactive compounds comprise polysiloxane diols (paragraph 0028) to obtain an aqueous polyurethane dispersion. Licht et al. does not explicitly teach the structure of the polysiloxane diols which can be used.

However, Reusmann et al. does teach an aqueous polyurethane dispersion which comprises polysiloxanes having the structural limitations of formula I of instant claim 6. Licht et al. and Reusmann et al. are combinable because they are from the same field of endeavor, namely, aqueous dispersions of polyurethanes. At the time of the invention, a person having ordinary skill in the art would have found it obvious to prepare the polyurethane dispersions comprising polysiloxane segments as taught by Reusmann et al. following the process of Licht et al. and would have been motivated to do so because Reusmann et al. teaches that the polysiloxanes diols in aqueous polyurethane dispersions are a critical ingredient which imparts a good soft feel effect without the need for additional flattening agents (paragraphs 0006-0007 and example 1 and comparative example 1).

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Claim 7: Licht et al. further teaches that the miniemulsion process produces droplet sizes preferably ranging from 50 to 500 nm, which completely encompasses the claimed range of instant claim 7.

Claim 8: Licht et al. further teaches that the polyol component (b1), which includes polysiloxane diols, is prepared by reaction of their starting compounds during the preparation of the miniemulsion (paragraph 0062).

Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reusmann et al. (US patent application publication 2003/0198819) in view of Licht et al. (WO 02/064657), as applied to claim 1 above, further in view of Krankenberg et al. (US Pat. 6,617,391).

Reusmann et al., in view of Licht et al., collectively teach an aqueous dispersion obtained by miniemulsion of instant claim 1 as described above. Reusmann et al. does not explicitly teach that R¹ and R² of the polysiloxanes can further comprise heteroatoms. However, Krankenberg et al. does teach polysiloxanes which comprise side chains comprising the heteroatoms N and O (2:5-55). Reusmann et al. and Krankenberg et al. are combinable because they are from the same field of endeavor, namely, polysiloxane compositions. At the time of the invention, a person having ordinary skill in the art would have found it obvious to employ the polysiloxanes having heteroatom functionalized side chains as taught by Krankenberg et al. into the aqueous dispersions of Reusmann et al. and would have been motivated to do so because Krankenberg et al. teaches that polysiloxanes comprising polyoxyalkylene side groups improves the water solubility (1:29-31) and that the polysiloxanes are useful in surface-active formulations (4: 13-

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17). Reusmann et al. is concerned with aqueous polyurethane dispersions and a person having ordinary skill in the art would have incentive to incorporate hydrophilic polysiloxanes so as to further stabilize the resulting aqueous polyurethane dispersions.

Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reusmann et al. (US patent application publication 2003/0198819) in view of Licht et al. (WO 02/064657), as applied to claim 1 above, further in view of Kim et al. (US Pat. 6,932,964).

Reusmann et al., in view of Licht et al., collectively teach an aqueous dispersion obtained by miniemulsion of instant claim 1 as described above. Reusmann et al. does not explicitly teach that R^3 - R^6 of the polysiloxanes can further comprise heteroatoms. However, Kim et al. does teach polysiloxanes having such structural limitations (7:43-8:3). Reusmann et al. and Kim et al. are combinable because they are from the same field of endeavor, namely, aqueous dispersions comprising polysiloxanes. At the time of the invention, a person having ordinary skill in the art would have found it obvious to employ the polysiloxanes having the heteroatom functionalized groups as taught by Kim et al. into the aqueous dispersions of Reusmann et al. and would have been motivated to do so because Kim et al. teaches that polysiloxanes comprising heteroatoms are preferred because they are water soluble and water dispersible (11:30-54). Reusmann et al. is concerned with aqueous polyurethane dispersions and a person having ordinary skill in the art would have incentive to incorporate hydrophilic polysiloxanes so as to further stabilize the resulting aqueous polyurethane dispersions.

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Relevant Art Cited

The prior art made of record and not relied upon but is considered pertinent to applicants disclosure can be found on the attached PTO-892 form.

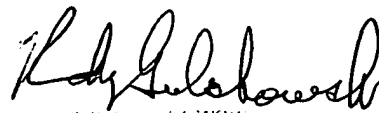
Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Loewe whose telephone number is (571) 270-3298. The examiner can normally be reached on Monday through Friday from 5:30 AM to 3:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RSL
7-Jan-08


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